

IN THE CLAIMS:

Amend the following claims:

1. (currently amended) An angle detection apparatus that detects an inclination angle of a detection object optical system, comprising:

a light source that irradiates light onto a reflective surface for detection provided on said detection object;

an optical path splitting element that splits an optical path of reflected light that has been reflected by said the reflective surface for detection into first and second luminous fluxes that are respectively propagated on at least first and second optical paths that are different from each other; and

a plurality of optical detectors that each receive a luminous flux split by said optical path splitting element, and each independently detect an inclination angle of said reflective surface for detection.

a first optical detector that is placed on the first optical path so as to receive the first luminous flux; and

a second optical detector that is distanced from the first optical detector and placed on the second optical path so as to receive the second luminous flux.

2. (currently amended) The angle detection apparatus optical system according to claim 1, wherein each luminous flux has a different amount of movement on light receiving surfaces of said plurality of optical detectors relative to an amount of change a first amount of movement of the first luminous flux on a first light receiving surface of the first optical detector is different from a second amount of movement of the second luminous flux on a second light receiving surface of the second optical detector, and the first and second amounts of movement are caused by a variation in the inclination angle of said the detection object.

3. (currently amended) The angle detection apparatus~~optical system~~ according to claim 1, wherein ~~each a first length of the first optical path from said that is defined between the reflective surface for detection to light receiving surfaces of said plurality of optical detectors has a different length and a first light receiving surface of the first optical detector is different from a second length of the second optical path that is defined between the reflective surface for detection and a second light receiving surface of the second optical detector.~~
4. (currently amended) The angle detection apparatus~~optical system~~ according to claim 1, wherein ~~said plurality of the first and second optical detectors each have are different from each other in characteristic of angle detection sensitivity characteristics in angle detection.~~
5. (currently amended) The angle detection apparatus~~optical system~~ according to claim 1, wherein ~~said the optical path splitting element comprises a beam splitter provided with an optical path splitting surface that splits said optical path into an optical path of the reflected light and an optical path of transmitted light into the first and second luminous flexes.~~
6. (currently amended) The angle detection apparatus~~optical system~~ according to claim 5, further comprising:
~~at least one optical surface with an optical surface having optical power that is placed between said the optical path splitting surface element and at least one of said plurality of the first and second optical detectors.~~
7. (currently amended) The angle detection apparatus~~optical system~~ according to claim 6, wherein ~~said the at least one optical surface is provided integrally with said to the at least one of said plurality of the first and second optical detectors.~~
8. (currently amended) The angle detection apparatus~~optical system~~ according to claim 6, wherein ~~said optical surface is provided on each of said optical paths to said plurality of optical detectors, and each optical surface has a the at least one optical surface comprises first and second~~

optical surfaces that are different in optical power, from each other and are respectively placed on the first and second optical paths.

9. (currently amended) The angle detection apparatus~~optical system~~ according to claim 6, wherein ~~each~~the at least one optical surface has a positive optical power.

10. (currently amended) The angle detection apparatus~~optical system~~ according to claim 6, wherein the at least one of said optical surfacesurface comprises a reflective surface having~~that~~ has a positive optical power.

11. (currently amended) The angle detection apparatus~~optical system~~ according to claim 40, 6, wherein ~~said~~the optical path splitting surfaceelement comprises a polarization splitting surface that either transmits or reflects the light by a polarization component, and
the angle detection optical system further comprises: a 1/4 wavelength plate that is placed between ~~said~~the polarization splitting surface and ~~said~~ reflective surface having positive~~the at least one~~ optical powersurface.

12. (cancelled)

13. (currently amended) The angle detection apparatus~~optical system~~ according to claim 1, wherein ~~said~~the optical path splitting element comprises a polarization beam splitter.

14. (currently amended) The angle detection apparatus~~optical system~~ according to claim 13, wherein ~~said~~the optical path splitting element comprises a nitrate material in which $n_d > \geq 1.7$ wherein n_d is ~~an~~the index of refraction.

15. (currently amended) The angle detection apparatus~~optical system~~ according to claim 1, wherein at least one of ~~said~~plurality of~~the~~ first and second optical detectors comprises a four section light receiver provided with a light receiving surface divided into four sections.

16. (currently amended) The angle detection apparatus optical system according to claim 1, wherein at least one of said plurality of the first and second optical detectors comprises a two-dimensional position detection light receiver.

17. (currently amended) TheAn angle detection apparatus according to claim 1, wherein said plurality of optical detectors include a four section light receiver provided with a light receiving surface divided into four sections and a two-dimensional position detection light receiver, comprising:

a light source that irradiates light onto a reflective surface for detection provided on a detection object;

an optical path splitting element that splits reflected light that has been reflected by the reflective surface for detection into first and second luminous fluxes that are respectively propagated on at least first and second optical paths that are different from each other;

a first optical detector that is placed on the first optical path so as to receive the first luminous flux;

a second optical detector that is distanced from the first optical detector and placed on the second optical path so as to receive the second luminous flux; and

a signal processor that receives a first detection signal from the first optical detector and a second detection signal from the second optical detector and processes the first and second detection signals so as to generate an angle detection signal that corresponds to a magnitude of an inclination angle of the detection object.

18. (currently amended) An optical signal switch system that switches an optical path of optical signals transmitted from one optical transmission path to another optical transmission path from among a plurality of optical transmission paths, comprising:

at least one light deflection element that is provided on a detection object and switches optical paths of the optical signals;

a reflective surface for detection for detecting a deflection angle of the light deflection element that is provided integrally with the light deflection element;

the angle detection apparatus according to claim 1 that detects the deflection angle using the light deflection element as a detection object; and that is provided on the detection object;

a light source that irradiates light onto the reflective surface;

an optical path splitting element that splits reflected light that has been reflected by the reflective surface into first and second luminous fluxes that are respectively propagated on at least first and second optical paths that are different from each other;

a first optical detector that is placed on the first optical path so as to receive the first luminous flux;

a second optical detector that is distanced from the first optical detector and placed on the second optical path so as to receive the second luminous flux;

a signal processor that receives a first detection signal from the first optical detector and a second detection signal from the second optical detector and processes the first and second detection signals so as to generate an angle detection signal that corresponds to a magnitude of an inclination angle of the detection object; and

a deflection angle control unit that controls a deflection angle of said the light deflection element using a deflection angle detected by said based on the angle detection apparatus. signal supplied by the signal processor.

19. (currently amended) An information recording and reproduction system that performs either recording or reproduction or both that at least one of recording and reproduction of information signals on a recording medium provided with a recording surface that enables either the recording or reproduction of information signals or both the recording and reproduction of information signals to be performed by light irradiation, comprising: the information recording and reproduction system comprising:

a light source that emits a first luminous flux;

an optical system that forms an image of said~~the first~~ luminous flux on said~~a~~ recording surface of said~~a~~ recording medium;

~~a light deflection element that is located within the optical system and that deflects said luminous flux onto said recording surface within a parallel surface, and has a reflective surface for detection whose inclination angle changes in synchronization with a deflection angle; and placed in the optical system, the light deflection element having a reflective surface that varies in an inclination angle depending upon a deflection angle of the first luminous flux that has been deflected in a plane that is parallel to the recording surface;~~

~~the angle detection apparatus according to claim 1 that detects the inclination angle using the light deflection element as a detection object.~~

a light source that irradiates light onto the reflective surface;

an optical path splitting element that splits reflected light that has been reflected by the reflective surface into first and second luminous fluxes that are respectively propagated on at least first and second optical paths that are different from each other;

a first optical detector that is placed on the first optical path so as to receive the first luminous flux;

a second optical detector that is distanced from the first optical detector and placed on the second optical path so as to receive the second luminous flux; and

a signal processor that receives a first detection signal from the first optical detector and a second detection signal from the second optical detector and processes the first and second detection signals so as to generate an angle detection signal that corresponds to a magnitude of an inclination angle of the detection object.